Output 2:
Dara Building (Grote Koppel),
Amersfoort, Netherlands, 2009

Abstract

The Dara Building in Amersfoort, Netherlands, makes a significant contribution to Sean Griffith’s of FAT Architecture’s on-going research into the creative potential of historical reference and repetition, in combination with digital and prefabricated construction techniques to generate new meanings in architecture. The design responded to a number of questions: how can a modern building integrate with and extend the meanings of an historic context? How can differentiation and variety be achieved using repetition? How can precast concrete construction be used to create expressive popular iconography and communicate cultural values about architecture? Can an art-based architectural practice be successful in a market driven environment? Its methodologies included numerous site visits to understand the site’s complexity and latent potential, discussions with local planning authorities to get a sense of the Dutch legislation and regulations for historic contexts, and typological research, drawing on the traditions of baroque influenced, gable fronted Dutch architecture. A variety of programmatic solutions, spatial permutations, and the three-dimensional complexity of the building and its surroundings were tested through extensive physical model making and other forms of digital visualisation. The innovative external wall and window panels of the building were generated by drawing and re-drawing, then interpreting these design motifs in digital format, which were then transferred directly to Dutch prefabricated concrete manufacturer, Hibex. Griffiths then collaborated closely with the manufacturer to produce the building’s signature prefabricated façade panels. The building has been favourably reviewed in the architectural media, including in Building Design, Blue Print and Domus, It is regularly featured in lectures and exhibitions about the work of FAT delivered nationally and internationally including at London Metropolitan University in 2009, the Walker Art Centre in Minneapolis in 2009 and the Strelka Institute in Moscow in 2010. Griffiths was the lead architect from conception to execution on the project.

Key Words

Historical reference, digital prefabrication, repetition, differentiation
The Dara Building is a commercial building, commissioned to celebrate the 750th anniversary of the founding of the city of Amersfoort. It was commissioned by Schipperbosch, a Dutch developer who has also worked with MVRDV, UN Studio, Foreign Office Architects and NLarchitects. In it, Sean Griffiths extends themes his research-based practice has pursued for a number of years into the creative potential of historical reference and repetition in combination with digital and prefabricated construction techniques, to generate new meaning in architecture. This continues in a deliberate fashion the work of American post-modernists Robert Venturi, Denise Scott Brown and Robert Stern, and brings postmodernist preoccupations forward into the digital fabrication age.

The project addressed the following research questions:

1) How might a modern building interpret its historic context and add to its cultural meanings?
2) How might the advantages of repetition offered by precast construction be used to produce variety and differentiation?
3) How might precast concrete construction be used to create expressive popular iconography and communicate cultural values about architecture?
4) How might an art based architectural practice work successfully in a market driven environment?
Aims and Objectives

1) To integrate a modern building into a complex historic context and add to its cultural meanings.

As has already been stated, the Dara Building was commissioned by a private developer to celebrate the 750th anniversary of the founding of the city of Amersfoort. It is sited at the eastern end of a row of nineteenth century riverside warehouses and modern office buildings (fig.01). It fronts the River Eem and is abutted by a mainline railway bridging over the river (fig.04). This forms the boundary between the historic town centre with its medieval street pattern and city walls and the nineteenth and twentieth century commercial city. Adjacent to the site is a national monument, a mediaeval water gate called the Koppelpoort. The site thus mediates complex and potentially contradictory influences - the river, the fortified mediaeval city, and modern nineteenth and twentieth century infrastructure, all of which needed to be absorbed into the building (fig.08).

Based on research into and knowledge of historical architecture and the development of cities over time, Griffiths opted for a palazzo typology for the building. This urban type typically comprised a principle facade fronting a street or streets, a piano nobile and an interior courtyard. In the Dara Building, this has been translated into a three storied building (fig.05) organised around a central atrium (fig.06), overlooked by balconies and traversed by a theatrically designed staircase that gives it a grand ceremonial quality (fig.03).

Externally, the building acknowledges the equivalence of river and railway with public facades fronting both (fig.02). Drawing on the traditions of baroque influenced, gable fronted Dutch buildings, these facades consist of rows of repetitive windows at each floor level (fig.15). These partially return onto the rear façade, creating a corner element that provides a gateway moment for those arriving by train into the city (fig.14a, b, c). The rear elevation, relating to the service areas of the building is made of simple black brickwork, contrasting with the two public facades of the building. The baroque influenced window surrounds protrude so that their depth forms the walls of the building (fig.11). At the top and bottom of each window panel decorative elements are distorted and twisted to create the impression of their reflection in water or that they are melting away (fig.17, fig.12). This is heightened by black concrete of the top story, suggestive of a building destroyed by fire. Non-structural, diagonal strut-like elements combine with this to suggest a building either under construction or falling down (fig.15). The building becomes a narrative for the city, constantly being ruined and rebuilt, and is suggestive of the events that form part of its history.

“The façade, seemingly plastic, is cast in modular concrete panels. Each of these panels, whether dripping in ornamental tendrils or topped with miniature roof gables emerge from a desire to graphically manifest the history of Grote Koppel” (Beatrice Galilee, 2010).
2) To take advantage of the repetitive advantages of precast construction to produce variety and differentiation.

The building exhibits innovative research into the potentialities of precast concrete technology. Its facades are made up of a series of precast concrete panels, each containing a window. These panels are loadbearing and incorporate all insulation, structure and finishes (fig.12). These responded to the design question posed by the architects as to whether a construction technique that usually demands repetition in both manufacture and expression could produce its antithesis – variety, difference and detailed articulation (fig.15, fig.16). This was achieved by placing decorative insets into precast concrete moulds to create different tops and bottoms to the different panels, while using the same basic template (fig.09). This technique gave the building a complex form of visual expression, vertically panelised, yet free flowing in the horizontal direction, repetitive but varied, solidly constructed and yet vulnerable in appearance.

3) To use precast concrete construction to create expressive popular iconography and communicate cultural values about architecture.

The expressive content of the building is embedded in the precast concrete panels, which make up its façade. Seemingly plastic, this façade communicates cultural values about architecture and the city that the building commemorates. Each of the panels, whether dripping in ornamental tendrils or topped with miniature roof gables emerge from a desire to graphically manifest the history of the site. The language, according to Griffiths is a kind of “mannerist futurism” (personal communication) (fig.19).

4) To translate an art based architectural practice into a market driven environment

The challenge for Griffiths in the Dara Building was how to translate aesthetic intentions and historic sensibilities into the language of a modern commercial development. He did this by focusing his design energies on the detailing of the façade panels, combining structure, insulation and aesthetic intent into a single precast element (fig.19). This meant that the cost-efficiency of repetition and prefabrication was made compatible with the aesthetic intent of the visual expression and communicative value. The result was a striking building whose external wall was made entirely in a factory, transported to site and erected in six weeks.
In the course of the design of this building, several visits were made to Amersfoort in the Netherlands to understand the site's complexity and latent potential (fig. 08). Extensive discussions were held with the local planning officers to get a sense of the local Dutch legislation and regulations for historic contexts. Research undertaken over many years was drawn upon to develop the typology for the building and a palazzo type adopted, drawing on the traditions of baroque influenced, gable fronted Dutch architecture. A variety of programmatic solutions and spatial permutations, as well as the three-dimensional complexity of the building and its surroundings was tested through extensive physical model making and other forms of visualisation. These analyses in turn allowed the refinement of the overall configuration of the building in terms of accessibility, circulation, lighting conditions, external finish, historical references and general functional viability. As well as more traditional forms of model making, or the drawing of plans and sections, the design process relied heavily on programmes like Photoshop and Vectorworks. The project capitalised on the abstraction made possible by contemporary representational techniques; for instance, the innovative external wall and window panels of the building were generated by drawing and re-drawing in Vectorworks, then interpreting these design motifs in digital format so they could be transferred directly to the Dutch prefabricated concrete manufacturer, Hibex (fig. 15-18). Through close collaboration with the company, the system of repetitive prefabrication incorporating differentiation described above was devised (fig. 13). This continued Griffith’s continued experimentation with prefabrication through close collaboration with manufacturers.
Dissemination / Impact

The building has been favourably reviewed in the architectural media, including in Building Design Blue Print and Domus. It was listed as one of the Daily Telegraph’s Top 10 Buildings of 2010. It is regularly featured in lectures and exhibitions about the work of FAT delivered nationally and internationally including at London Metropolitan University in 2009, the Walker Art Center in Minneapolis in 2009 and the Strelka Institute in Moscow in 2010.

Reviews of the Dara Building in the architectural media include:


Evidence

Images and Drawings

Fig. 01 Site Plan
Fig. 02 Ground, First and Second Floor Plans
Fig. 03 Long Section
Fig. 04 Short Section
Fig. 05 Model held up to Site
Fig. 06 Façade panel in factory
Fig. 07 Façade panels being erected
Fig. 08 Façade panel detail
Fig. 09 Canal Elevation
Fig. 10 Corner of building at night
Fig. 11 Internal staircase

Technical Development

Fig. 12 Wall build-up sketch, Façade corner detail
Fig. 13a, b Corner offset studies
Fig. 14a, b, c Corner studies
Fig. 15 Panel dimensions
Fig. 16 Response to panel prototype photographs
Fig. 17 Panel Schedule 01
Fig. 18 Panel Schedule 01, Option 2
Fig. 19 Panel Schedule 02
Fig. 20 Panel Schedule Detail
Fig. 21 Panel Schedule 02 Option 1
Fig. 22 Elevations

Press

Fig. 02 Ground, First and Second Floor Plans
Fig. 03 Long Section
Fig. 05 Model held up to site
Fig. 06 Façade panel in factory
Fig. 08 Façade panel detail.
Fig. 11 Internal Staircase
Fig. 12 Wall build-up sketch, Façade corner detail

Fig. 13 Response to panel prototype photographs

Ground floor panel
This needs to be set back to the specified depth, 50mm

First floor panel
This needs to be set back to the specified depth, 50mm

Technical Development
Fig. 15  Panel Schedule 01
Fig 16 Panel Schedule 01, Option 2
**TOP TYPE:**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="E1" /></td>
<td><img src="image" alt="E2" /></td>
<td><img src="image" alt="S3" /></td>
<td><img src="image" alt="E4" /></td>
<td><img src="image" alt="S12" /></td>
<td><img src="image" alt="S1" /></td>
</tr>
<tr>
<td><img src="image" alt="E3" /></td>
<td><img src="image" alt="E6" /></td>
<td><img src="image" alt="S9" /></td>
<td><img src="image" alt="W17" /></td>
<td><img src="image" alt="S18" /></td>
<td><img src="image" alt="S7" /></td>
</tr>
<tr>
<td><img src="image" alt="W25" /></td>
<td><img src="image" alt="S13" /></td>
<td><img src="image" alt="W11" /></td>
<td><img src="image" alt="S21" /></td>
<td><img src="image" alt="W27" /></td>
<td><img src="image" alt="W5" /></td>
</tr>
<tr>
<td><img src="image" alt="W16" /></td>
<td><img src="image" alt="S19" /></td>
<td><img src="image" alt="S27" /></td>
<td><img src="image" alt="S28" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="W4" /></td>
<td><img src="image" alt="S3" /></td>
<td><img src="image" alt="S29" /></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes:**
- Drawings are for information only - not for construction.
- Use figured dimensions only - do not scale from drawing.

---

**Fashion Architecture Taste (FAT) Ltd**

Unit 2 49-59 Old Street

London EC1V 9HX

Tel  020 7251 6735

Fax 020 7251 6738

Email fat@fat.co.uk

www.fat.co.uk
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5</td>
<td>S24</td>
<td>S15</td>
<td>W14</td>
<td>W20</td>
<td>S12</td>
<td>S14</td>
</tr>
<tr>
<td>W24</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>S26</td>
<td>W22</td>
<td>S30</td>
<td>W26</td>
<td>S28</td>
<td>S29</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 17b Panel Schedule Detail
<table>
<thead>
<tr>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3</td>
<td>S16</td>
<td>W13</td>
<td>W23</td>
<td>S25</td>
<td>S21</td>
<td>W21</td>
</tr>
<tr>
<td>E3</td>
<td>S16</td>
<td>W13</td>
<td>W23</td>
<td>S25</td>
<td>S21</td>
<td>W21</td>
</tr>
<tr>
<td>E3</td>
<td>S16</td>
<td>W13</td>
<td>W23</td>
<td>S25</td>
<td>S21</td>
<td>W21</td>
</tr>
</tbody>
</table>
# Panel Schedule 02 Option 1

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><img src="image6.png" alt="Diagram" /></td>
<td><img src="image7.png" alt="Diagram" /></td>
<td><img src="image8.png" alt="Diagram" /></td>
<td><img src="image9.png" alt="Diagram" /></td>
<td><img src="image10.png" alt="Diagram" /></td>
<td><img src="image11.png" alt="Diagram" /></td>
<td><img src="image12.png" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td><img src="image13.png" alt="Diagram" /></td>
<td><img src="image14.png" alt="Diagram" /></td>
<td><img src="image15.png" alt="Diagram" /></td>
<td><img src="image16.png" alt="Diagram" /></td>
<td><img src="image17.png" alt="Diagram" /></td>
<td><img src="image18.png" alt="Diagram" /></td>
<td><img src="image19.png" alt="Diagram" /></td>
<td><img src="image20.png" alt="Diagram" /></td>
<td><img src="image21.png" alt="Diagram" /></td>
<td><img src="image22.png" alt="Diagram" /></td>
<td><img src="image23.png" alt="Diagram" /></td>
<td><img src="image24.png" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td><img src="image25.png" alt="Diagram" /></td>
<td><img src="image26.png" alt="Diagram" /></td>
<td><img src="image27.png" alt="Diagram" /></td>
<td><img src="image28.png" alt="Diagram" /></td>
<td><img src="image29.png" alt="Diagram" /></td>
<td><img src="image30.png" alt="Diagram" /></td>
<td><img src="image31.png" alt="Diagram" /></td>
<td><img src="image32.png" alt="Diagram" /></td>
<td><img src="image33.png" alt="Diagram" /></td>
<td><img src="image34.png" alt="Diagram" /></td>
<td><img src="image35.png" alt="Diagram" /></td>
<td><img src="image36.png" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td><img src="image37.png" alt="Diagram" /></td>
<td><img src="image38.png" alt="Diagram" /></td>
<td><img src="image39.png" alt="Diagram" /></td>
<td><img src="image40.png" alt="Diagram" /></td>
<td><img src="image41.png" alt="Diagram" /></td>
<td><img src="image42.png" alt="Diagram" /></td>
<td><img src="image43.png" alt="Diagram" /></td>
<td><img src="image44.png" alt="Diagram" /></td>
<td><img src="image45.png" alt="Diagram" /></td>
<td><img src="image46.png" alt="Diagram" /></td>
<td><img src="image47.png" alt="Diagram" /></td>
<td><img src="image48.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Fig. 18a Panel Schedule 02 Option 1
Notes
Window positions have been revised to allow for more windows on the
ground floor of the restaurant to be openable. Window positions have
been revised to allow for the repositional of diagonals.
N.B. The shadow gap of the diagonals are set back to match shadow
gap of panels. Grey fill denotes shadow gap set back.

Cross diagonals are to be made from 4 pieces.

Fig. 19 a Elevations
Diagonal element with shadow gap, to be set back the same as the shadow gap on the panels.

Two sizes of diagonals.

Type 1: 150mm wide diagonal with a 55mm wide shadow gap, to be set back the same as the shadow gap on the panels.

Cross diagonals are to be made from 4 pieces.

Type 2: 285mm wide diagonal with a 100mm wide shadow gap, to be set back the same as the shadow gap on the panels.

Shadow gap

Type 1: 150mm wide diagonal with a 55mm wide shadow gap.

Type 2: 285mm wide diagonal with a 100mm wide shadow gap.

N.B The shadow gap of the diagonals are set back to match shadow gap of panels. Grey fill denotes shadow gap set back.

Note: Window positions have been revised to allow for more windows on the ground floor of the restaurant to be openable. Window positions have been revised to allow for the repositional of diagonals.
£60m housing scheme puts DSDHA in big league

BD's Architect of the Year to design luxury scheme on site of former government buildings

MJP focuses on beech life at St John's

BUILDINGS: FAT

Sweet tooth

Fat’s new building in the Dutch town of Amersfoort is good enough to eat, writes Ellis Woodman

Pictures by Jeroen Musch

Fat’s director, Piotter, describes his latest project, Grote Koppel, as a mixed-use building in the heart of the Dutch town of Amersfoort, in the old town is marked by a magnificent historic water gate, a sculptural tradition to which Fat’s scarcely abjectly kitsch, and yet the image presented is not only acknowledges those bien-vous, not only kitsch, and yet the image presented is

Fat’s new building in the Dutch town of Amersfoort is good enough to eat, writes Ellis Woodman

pictures by Jeroen Musch

Fat’s director, Piotter, describes his latest project, Grote Koppel, as a mixed-use building in the heart of the Dutch town of Amersfoort, in the old town is marked by a magnificent historic water gate, a sculptural tradition to which Fat’s scarcely abjectly kitsch, and yet the image presented

Seeing Vincent in a startling new light

2009's best shows

2009 was the year that Vincent van Gogh was rediscovered. A fascinating exhibition took place at the National Gallery in London, offering a new perspective on the artist's work. The exhibition included never-before-seen letters and documents, providing a behind-the-scenes look at van Gogh's life.

More than just a pretty facade

Spiritual architecture ruled the day, from a hippy hut to a Hindu school

The exhibition at the Victoria and Albert Museum in London explored the role of architecture in the spiritual world. From a simple hippie hut to a grand Hindu temple, the exhibition showcased a range of architectural styles from around the world.

Imperial Chinese Robes

From the Forbidden City

The exhibition at the Victoria and Albert Museum in London explored the history of Chinese imperial robes, from the Tang Dynasty to the Qing Dynasty. The exhibition featured a collection of robes, including the famous Dragon Robes, which were worn by Chinese emperors.

Recession, what recession?

Art market boomed as the art market bucked the downturn

In 2009, the art market experienced a significant boom, with prices for works of art rising sharply. The exhibition at the Christie's auction house in London showcased a range of works, including paintings by van Gogh, Picasso, and Monet, which sold for record-breaking prices.

A coffee with Bouke de Vries

Interview with the curator Bouke de Vries

The curator of the van Gogh exhibition at the National Gallery in London, Bouke de Vries, was interviewed about the exhibition's success and the impact it had on the public. He discussed the challenges of curating such a large exhibition and the importance of bringing art to a wider audience.